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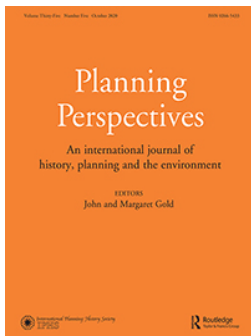
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# Avoiding white elephants? The planning and design of London's 2012 Olympic and Paralympic venues, 2002–2018

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## ABSTRACT

An issue commonly identified with the vast and costly developments that cities produce to host the Olympic Games is that they are prone to becoming 'white elephants' – obsolete or underused constructions that become cost burdens for cities. White elephants are particularly associated with some of the most recent Games of the twenty-first century, as reflected in accounts of 'limping' or obsolete venues in Sydney, Athens, Beijing, Rio and Sochi. This paper begins with a review of issues associated with spatial planning, architecture and planning process in the production of white elephants in Olympic history. It goes on to provide an historical account of London's efforts from 2002 to 2012 avoid attracting a repetition of the critique that followed earlier Olympics. Finally, it assesses its ongoing efforts and record over the six-year period from 2012 to 2018.

## KEYWORDS

London Olympics; sports venues; white elephants; legacy; design

## Introduction

An issue commonly identified with the vast and costly developments that cities produce to host the Olympic Games is that they are prone to becoming "white elephants." 'White elephants' are particularly associated with the cities that have hosted some of the most recent Games of the twenty-first century, as reflected in accounts of the 'uncertain legacy' of Sydney's Stadium two years after the 2000 Games, Athens's struggles to generate viable reuses for its venues, Beijing's largely empty 'bird's nest' stadium, and of numerous hoarded or boarded-up venues in Rio, Sochi and beyond.<sup>1</sup>

According to the Oxford English Dictionary, the origins of the term 'white elephant' lie within the seventeenth century accounts of European travellers to South East Asia.<sup>2</sup> The term describes Asian elephants exhibiting a rare form of skin pigmentation resulting in 'pale skin, hair, nails, and eyes'.<sup>3</sup> These animals were venerated within Siamese and Burmese culture. To keep one was to hold a symbol of wealth and eminence and, as such, a prized possession. However, they had no real practical value, meaning that, in economic terms, they were a cost burden to their owners. On occasion,

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<sup>1</sup>For example: Alm et al., "Hosting Major Sports Events: The Challenge of Taming White Elephants," 564–82; Panagiotopoulou, "The Legacies of the Athens 2004 Olympic Games," 173–95; Mitrofanova et al., "Drivers of the Regional Economic Growth and the Problem of 'White Elephants' of the Russian Olympic Megaproject 'Sochi 2014,'" 267–276. Mangan, "Prologue: Guarantees of Global Goodwill: Post-Olympic Legacies – too Many Limping White Elephants?," 1869–83; Searle, "Uncertain Legacy," 845–60; Smith, *Events and Urban Regeneration*, 75–95.

<sup>2</sup>Oxford English Dictionary, entry for "white elephant."

<sup>3</sup>Ibid.

the Kings of Siam are alleged to have offered them as gifts to courtiers who had displeased them, seeming to enhance their status while actually ruining them through the cost of their maintenance.

These accounts have long been called into question as historical facts but, as the OED suggests, they underpin a second, newer definition in which the term can denote any 'burdensome or costly objective, enterprise, or possession, *esp.* one that appears magnificent; a financial liability'. This includes products of planning and architectural design that bear these characteristics, such as developments for the Olympic Games and other megaevents.

These developments, which often involve large infrastructure projects as well as vast parklands and architecturally iconic venues, often hold huge symbolic value for host cities at the time that bids for the Games are won and when they are opened and televised as spectacle around the world. They are seen to become white elephants typically through failures to manage the high and often spiraling costs associated with their construction, to secure long term "practical value," leading to untimely, unplanned obsolescence, and to cover long-term maintenance costs with the revenues associated with any post-Games reuses. As for the Siamese courtier, the initial elevation of a city's status through a winning bid can be undermined by the impacts of costs on public finances, by the limited benefits developments create for citizens, and by the physical appearance of 'limping'<sup>4</sup> or even crumbling structures. Planning and design (at the urban and architectural scale) have a key role to play in producing or avoiding the production of gaps between intentions or expectations and impacts or legacies.<sup>5</sup>

From the time of the bid for the 2012 Games in 2002-2004, leaders and promoters of London's Games made avoiding white elephants, already becoming a focus of the scholarly critique of the legacies of Sydney 2000, a key pledge. The Mayor of London Ken Livingstone is reported to have stated at a Press Conference in Athens in 2004 that:

[i]t would be utterly inexcusable if, were we to win the games, the facilities we build were to end up unused. They have to be available to the people of the city and of the deprived areas these games are intended to regenerate.<sup>6</sup>

Upon the award of the 2012 Games to London in 2005, he vowed that the reusability and regenerative potential of the Olympic stage set would be key components in London's quest to deliver the 'most sustainable Games ever'.<sup>7</sup>

This paper provides an historical account of London's efforts through planning and design from 2002 to avoid white elephants, focussing on its sports venues and especially those set within the Olympic Park in East London. It begins with a review of literature to understand the key aspects of planning and design that have been associated with the production of white elephant venues in other Olympic cities. It goes on to explore London's approach in terms of these aspects and any other distinctive strategies to avoid white elephants in the run-up to the Games (2002-2012). The final section explores the outcomes of the approach in terms of the process of transforming the main Olympic Park after 2012, the reuses of its five permanent venues (2012-2018) and the management of costs related to venue adaptation, operation and maintenance. The paper concludes by arguing that London's record in terms of the production of white elephants is mixed and by setting out how it advances existing understandings of how white elephant venues are either created or avoided.

<sup>4</sup>Mangan, "Prologue: Guarantees of Global Goodwill: Post-Olympic Legacies," 1869-83.

<sup>5</sup>For example: Brown and Cresciani, "Adaptable Design in Olympic Construction," 397-416; Smith, *Events and Urban Regeneration*; Stewart and Rayner, "Planning Mega-event Legacies," 157-79.

<sup>6</sup>Kelso, "Heavyweights Line up for London's 2012 Bid."

<sup>7</sup>Ibid.

## White Elephants in Olympic Planning and Design History

The production of white elephants reflects the ‘paradox’ that Flyvbjerg et al have associated with megaprojects more broadly: cities have continued to justify vast expenditures on the production of venues and parklands on the basis of future benefits while obsolescence, cost overruns and lasting issues of economic viability have also continued to raise significant questions about the value of these investments for cities.<sup>8</sup>

History shows that white elephants have been produced since some of the earliest instances of the Modern Games. The first documented case is main stadium produced for the 1908 London Olympics which was little used between the Games and its eventual demolition in 1962.<sup>9</sup> Other commonly cited examples include the venues constructed for Montreal 1976 and Sarajevo 1984. However, the most significant body of analysis relates to the legacies of Summer and Winter Games held in the twenty-first century including the Summer Olympics of Sydney 2000, Athens 2004 and Beijing 2008 and the Winter Olympics of Turin 2010.

The fate of venues can be shaped by factors that lie outside the direct scope of planning and design. In Bosnia, for example, the decayed leftovers of the Sarajevo 1984 Winter Games, and the eventual reuse of one venue as a graveyard in the aftermath of the 1990s Balkan Wars testifies to the crucial role of broader social and political contexts. Notwithstanding, decisions related to planning and design are recognized as significant in the production of gaps between expectations of future benefits and the ‘hard realities’ of materializing legacy.<sup>10</sup>

Starting at the urban to regional scale, the *location of venues* relative to urban cores and/or planned development has been shown to have an important bearing on their reuse potentials.<sup>11</sup> The choice to locate the Olympics in peripheral areas is often done on the basis that this can concentrate the benefits of investment on these places, helping to ‘catalyse’ planned regeneration and/or the development of new urban quarters.<sup>12</sup> This is understood as an intention or promise commonly associated with of megaevents in the context of neoliberal urban planning policies.<sup>13</sup> But, in instances where the Games have been located in spatially peripheral sites, such as Sydney’s Paramatta, venue reuses have been seen to be affected by the absence of existing local communities creating footfall and demand.<sup>14</sup> The venues of more centralized Games, in contrast, such as Atlanta 1996, have been seen to benefit from the existing urban life around them to provide demand and from not having to wait for planned development and/or infrastructure to arrive.

A related issue is the extent to which venues are *concentrated within or dispersed around cities*. Issues have arisen in cases such as Sydney 2000 where planning has concentrated venues producing ‘sports zones’, especially when only some of the venues have been open to public use and/or when there has been a lack of urban context.<sup>15</sup> More dispersed Paris 1920, Mexico 1968, Los Angeles 1984, and Athens 2004 Games were all associated with transportation issues during the Games but dispersal has also been seen to create the potential for a better integration of facilities within city fabrics

<sup>8</sup>Flyvbjerg et al, *Megaprojects and Risks*, 1–5.

<sup>9</sup>Gold and Gold, “From A to B: The Summer Olympics, 1896–2008,” 17–55.

<sup>10</sup>As in: Zimbalist, *Rio 2016: Olympic Myths, Hard Realities*.

<sup>11</sup>Smith, *Events and Urban Regeneration*, 80–83.

<sup>12</sup>Essex and Chalkley, “The Olympics as a Catalyst of Urban Renewal,” 187–206; Smith, “Spreading the Positive Effects of Major Events to Peripheral Areas,” 231–2.

<sup>13</sup>Hall, “Urban Entrepreneurship, Corporate Interests and Sports Mega-events,” 59–70; Sager, “Neo-liberal Urban Planning Policies,” 147–99.

<sup>14</sup>For example: Liao and Pitts, “A Brief Historical Review of Olympic Urbanization,” 1232–52; Essex and Chalkley, “The Olympics as a Catalyst of Urban Renewal,” 187–206.

<sup>15</sup>Müller, “The Mega-Event Syndrome,” 6–17; Smith, *Events and Urban Regeneration*, 75–76.



afterwards. Of course, Games plans often involve a mix of concentrated nodes of activity and dispersal, such as Barcelona 1992 which opted for a strategy of four 'cluster sites' distributed around the city centre.<sup>16</sup>

Decisions regarding the balance between *new venues to be built from scratch* versus *the potential for existing venues to be refurbished* clearly have a major bearing on the costs associated with the Games but also on the levels of risk that cities take on with regard to legacy.<sup>17</sup> Summer Games hosts typically need to prepare 31–38 competition venues and up to 90 training sites for the 28 Olympic sports. Cities that have built large numbers of new venues have typically had higher incidences of white elephants. Beijing, for example, which produced white elephants, built twenty new venues. At the other end of the spectrum, Los Angeles built just four new venues for its 1984 Games while reusing seventeen existing ones, and regardless of how the private financing of this Games is viewed, is widely seen as a model of economy. Among those refurbished, the vast Memorial Coliseum was a legacy of the 1932 Los Angeles Olympics (and it will be used again almost a hundred years later for the 2028 Games).<sup>18</sup>

The extent to which cities concentrate on the development of *permanent or temporary venues* and how effectively this decision is taken in view of realistic future demand is similarly key.<sup>19</sup> An emphasis on demountable, temporary buildings has been a feature of recent Games including Beijing and Rio, showing growing recognition of the need to reflect the fleeting demands of venues in construction. In Salt Lake City, host to the 2002 Winter Olympics, the majority of venues were temporary, outnumbering permanent venues by 3:1 and no white elephants were produced.<sup>20</sup> However, in Beijing and Rio, temporary buildings perhaps at best only served to take the edge off the issues of legacy planning relating to the scale of new Olympic development.

Venue legacy is affected when plans for the redevelopment of Games sites and the reuses of venues are not in place early enough for works to proceed soon after the Games, in other words when the *timings of legacy planning and development* processes have created issues. In the case of Sydney, for example, the establishment of an urban legacy planning process and associated governance and management arrangements has been widely seen to have begun too late, creating a lull between the event and both the development of the main and the reuses of venues characterized by 'uncertainty' and unconfidence regarding eventual outcomes.<sup>21</sup>

Coming onto the architectural design of the venues, design for *reusability* is clearly key to avoiding white elephants and architectural obsolescence more widely, as Abramson argues.<sup>22</sup> Reusability is often understood as a reflection either of the *flexibility* of venues – their inherent capacity to accommodate different legacy reuses – or their *adaptability*, as in their capacity to be modified after the Games. As Gold and Gold suggest, reusability has been an issue faced by many stadia built for athletics which have rarely provided ideal conditions for other sports such as football. Much has been written in this regard about the difficulties which Sydney faced in endeavouring to identify viable reuses for the 85,000-seat Olympic Stadium (Stadium Australia) and subsequent issues of adaptation,<sup>23</sup> and such difficulties also persist in the case of Beijing.

<sup>16</sup>Monclús, "Barcelona 1992," 277.

<sup>17</sup>Smith, *Events and Urban Regeneration*, 75–76.

<sup>18</sup>Gold and Gold, *From A to B*, 45.

<sup>19</sup>Mangan, "Prologue: Guarantees of Global Goodwill: Post-Olympic Legacies?" 1869–83.

<sup>20</sup>Essex, *The Winter Olympics*, 67.

<sup>21</sup>Searle, Glen. "The Long-Term Urban Impacts of the Sydney Olympic Games," 195–202.

<sup>22</sup>Abramson, *Obsolescence*, 79–106.

<sup>23</sup>Searle, "Uncertain Legacy," 845–60; Cashman, *The Bitter-sweet Awakening*.

Flexibility is shaped by a range of factors including the size and form of stadia, sightlines, the presence of covers or roofs, and relationships between stands and pitches.<sup>24</sup> It can be facilitated through moveable or kinetic elements such as retractable roofs, roll-out pitches and mobile stands that allow seating to be reconfigured as intimated (in not successfully) realized by the Montreal Stadium of 1976. Flexibility can also be created through large, hanger-like buildings that allow for multiple forms of future subdivision, drawing on idea of the 1960s 'megastructure'.<sup>25</sup> This can help ensure that venues can cater to multiple uses encompassing elite sports as well as more every day, grass-roots, activities.

Adaptability, in contrast, depends on the ease with which components can be removed or added. In Atlanta, for example, the main stadium built for the 1996 Olympics was designed with removal demolition in mind to create a 47,000 seat venue for a local baseball club, the Atlanta Braves.<sup>26</sup> However, creating adaptability after the Games is one thing, but creating long-term adaptability is another, as the common obsolescence of stadia after a few decades, even here, suggests. With careful, advance planning, adaptability could be created to facilitate non-sporting uses if these are viable, though where the adaptation of venues to such uses has happened to date, it has been unplanned. For example, the 1976 Montreal Olympic Velodrome was adapted to create the Montreal Biodome in 1992. In Athens, numerous venues were adapted to non-sporting uses including a large theatre, a shopping and recreation centre and a new headquarters for the Ministry of Health.<sup>27</sup> Noted issues with these were that the identification of these reuses took considerable time, and adaptation was major and costly.

Effective design for reuse has often also been seen to involve the *integration of future operators and end-users in the co-design of venues*.<sup>28</sup> In Atlanta, the design of venues involved the future operators, many of whom took on the role of adapting the venues themselves afterwards.<sup>29</sup> As Horne argues, full public consultation before even submitting bids 'is needed if mega-events, as megaprojects, are to regain public support and become more democratically accountable achievements' rather than events that, as in Rio, require the violent repression of opposition to accomplish.<sup>30</sup> Significant in this regard is the fact that Olympic megaevent planning is often associated with the creation of quangos and agencies set up to deliver commercial strategies but which are observed to shut public authorities and communities out of the planning process.

Finally, coming onto financial issues that are key to our definition of white elephants, Olympic venues are often associated with *high design and construction costs* but also with high levels of risk in terms of cost management. These are connected to the predilection of host cities and their delivery authorities for non-standard, iconic buildings.<sup>31</sup> This sometimes, though not always, reflects neoliberal, entrepreneurial policies that emphasize the role of mega-events in the enhancement of 'urban image' in order to make cities more competitive in a global context. It also arises in contexts of nation-building such as in Australia and, in different ways, in China and post-Soviet Russia.<sup>32</sup> As Smith argues, iconic buildings also often reflect 'political vanity' on the part of political elites and Games development leaders.<sup>33</sup>

<sup>24</sup>Brown and Cresciani, "Adaptable Design in Olympic Construction," 397–416.

<sup>25</sup>Abramson, *Obsolescence*, 79–106.

<sup>26</sup>Gold and Gold, "From A to B," 47; Alm et al., "Hosting Major Sports Events," 564–82.

<sup>27</sup>Mangan, "Prologue: Guarantees of Global Goodwill: Post-Olympic Legacies?," 1873.

<sup>28</sup>Smith, *Events and Urban Regeneration*, 78.

<sup>29</sup>Gold and Gold, "From A to B," 47.

<sup>30</sup>Horne, "The Four 'Knowns' of Sports Mega-Events," 92.

<sup>31</sup>Sklair, "Iconic Architecture and the Culture-Ideology of Consumerism," 135–59.

<sup>32</sup>Traganou, *Designing the Olympics*, Chapters 1 and 2; Ren, "Architecture and Nation Building in the Age of Globalization," 175–90.

<sup>33</sup>Smith, *Events and Urban Regeneration*, 68–70.

Flyvbjerg and Stewart show that the costs of development for the Games have, on average, run beyond estimates by 179 per cent in real terms since 1960.<sup>34</sup> Overruns may have fiscal implications that endure as financial burdens for many years, as exemplified by the case of Montreal, which took forty years to pay off debts incurred through development for the 1976 Games, and by Athens where costs overruns helped exacerbate the impacts of the 2007–12 financial crisis.<sup>35</sup> Developments are often associated with high ongoing maintenance and operation costs, as illustrated by the annual requirement of ten million dollars to maintain Beijing's 'Bird's Nest' Stadium, which is largely unused. These costs can cause venues to limp as commercial endeavour and/or, as Alm et al evidence, lead potential users to pull out of deals.<sup>36</sup> But, as Davidson argues, they can also lead to the adoption of commercial strategies relating to business space, housing and venue reuses that result in exclusivity, depleting public value.<sup>37</sup>

We turn now to the case of London's preparations for and development of the legacy to its 2012 Games to offer an analysis and commentary on how it set out to avoid white elephants through planning and design from 2002. The discussion is structured to offer an historical account while discussing London's approach to each of the issues discussed above. The underpinning research involved in-depth analysis of documents including the London Plan 2004, London's Candidate File for the 2012 Summer Olympic and Paralympic Games (2004), planning applications for the Olympic Park and individual venues, planning committee minutes, the annual accounts of the London Legacy Development Corporation (LLDC) and Lea Valley Regional Park Authority (LVRPA) that own the venues in the main Olympic site today, the legal firm Moore Stephens' independent assessment of the finances of the Olympic Stadium and venue operators' management plans and websites. It also included interviews conducted at various stages of the research including with planners at the Olympic Delivery Authority (ODA) (2010), LLDC (2017), LVRPA (2009, 2019) and a local group engaged in the design of the VeloPark (2009, 2010, 2019), and visits to the venues on several occasions.

## Planning and designing out White Elephant traits – 2002–2012

From the time of London's bid in 2002–2004 for the 2012 Olympics, decisions regarding siting and spatial planning for the Games and legacy were formed in the context of a broader strategic plan for the city, and this is clearly key to understanding strategies to avoid white elephants. The Greater London Authority's decision in 2002 to back the London bid was founded in the conviction, drawing in particular on the experience of Barcelona, that an Olympics in East London would support its objectives regarding regeneration and growth as set out in the first iteration of the new London Plan (finally published in 2004). Reflecting the role commonly ascribed to megaevents in the context of neoliberal planning policy, it was believed that securing the Games would increase capacities to mobilize public funding in infrastructural improvements and amenities and that these would create a stimulus to market-led urban change, transforming the twenty-first century fortunes of East London.<sup>38</sup> The 250-hectare site in the Lower Lea Valley chosen as a main focus for the Games was an identified 'Opportunity Area' within the emerging London Plan, as a site simultaneously awaiting regeneration and capable of accommodating substantial amounts of new development.<sup>39</sup>

<sup>34</sup>Flyvbjerg and Stewart, "Olympic Proportions," 3.

<sup>35</sup>Panagiotopoulou, "The Legacies of the Athens 2004 Olympic Games," 176–80.

<sup>36</sup>Alm et al., "Hosting Major Sports Events," 564–82.

<sup>37</sup>Davidson and Mc Neill "The Redevelopment of Olympic Sites," 1625–1641.

<sup>38</sup>London 2012, *Candidate File*, 1, 23

<sup>39</sup>Davis, Juliet, "Futurescapes of Urban Regeneration," 15–16.



The site was seen to provide scope to address several issues associated with *the locations of venues and parklands* in creating white elephants in past Olympic cities. As an historically *peripheral* area that had become associated with urban decline and deprivation in the context of post-industrialisation, it offered the benefit of being easily portrayed as needy of investment and compulsory purchased for regeneration purposes. It was also large enough to accommodate a park and several venues — an advantage often associated with more remote locations. But it was also seen to provide benefits typically associated with more *central* sites in being well connected via transport infrastructure and bordered by existing neighbourhoods. Among them, Stratford was to become a Metropolitan Centre, a focus of forty per cent of London's anticipated job growth and a major transport hub.<sup>40</sup> These existing communities were seen as lacking in sports facilities among other amenities and future communities were expected to create escalating demand.<sup>41</sup>

The East London site would provide a focus for the Games, but it would by no means accommodate all sporting contests. As illustrated in London's 2004 Candidate File, the distribution of the thirty-three Olympic sports was planned to involve a mix of *concentration and dispersal*. Many events were planned to take place elsewhere in London — typically within what were identified as the 'River Zone' and the 'Central Zone' — and even beyond, as shown in Figure 1.<sup>42</sup>

Several other key strategies to avoid white elephant are also apparent among the documents comprising London's Olympic Bid. They suggest that the *number of venues to be built from scratch* would be limited to twelve, while seventeen existing venues would be utilized. The Olympic Park would be the recipient of the bulk of new construction (including eight sports venues, the Village and the Media Press Centre/ International Media Broadcast Centre (MPC/IMPC)), though there would also be new venues in Regent's Park (Softball) and the Upper Lea Valley (Canoe Slalom).

Venues would be designed to be *permanent* only following careful future demand analysis aimed at pre-empting the risk of functional obsolescence. This suggested the retention of only six venues — the Velodrome, a multi-sports arena, main Olympic Stadium, Aquatics Centre and Hockey Centre in the Olympic Park, and the Canoe Slalom facility in the Upper Lea Valley. Existing local demand for an aquatic centre in Stratford and for a velodrome in East London was shown to be so significant that an intention to construct these venues irrespective of the outcome of the Bid could be confirmed. The six other new venues would be *temporary*. In addition, permanent venues would be designed to be *adaptable* after the Games to anticipated legacy reuses — the Stadium would reduce down to a 25,000-seat athletics venue and the Aquatics Centre would become a local swimming facility, for example.

However, despite the bold assertion within the Bid documents that the 'extravagance' associated with past Olympic designs and development would be curtailed,<sup>43</sup> plans and visualizations, produced by a consortium led by international planning and urban design firm EDAW and including Foreign Office Architects (FOA) and Allies and Morrison Architects (A&M), suggest no intention to pass up on the opportunity to create a spectacular Games.<sup>44</sup> They present a vision to transform the Lea Valley through *iconicity* of the kind described by Sklair as key to neoliberal strategies of attracting global capital, and by megaevent scholars as often key to the production of *cost overruns*.<sup>45</sup>

<sup>40</sup>GLA, *London Plan 2004*, 254; Evans, Graeme, "London 2012," 375–77.

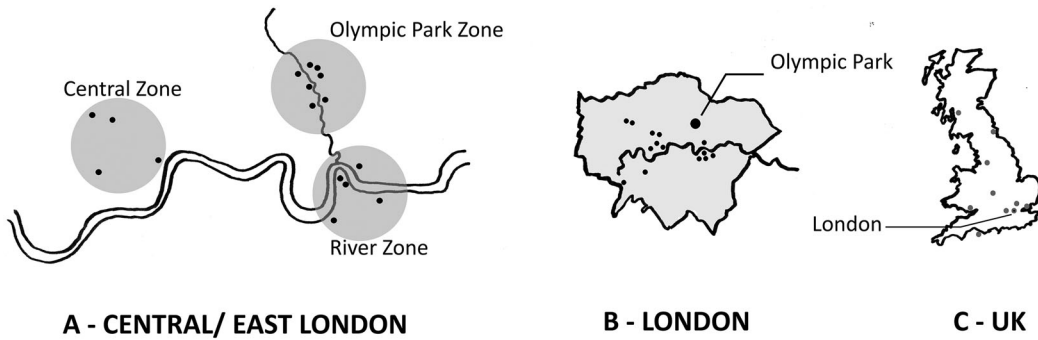
<sup>41</sup>GLA, *op. cit.* 242.

<sup>42</sup>London 2012, *Candidate File*, 2, 20–35.

<sup>43</sup>London, 2012, *Candidate File*, 1, 19; Gold and Gold, "Future Indefinite?" 188.

<sup>44</sup>London 2012, *op. cit.*, 19.

<sup>45</sup>Sklair, "Iconic Architecture and the Culture-ideology of Consumerism," 135–159.



**Figure 1** Olympic sites and locations [Juliet Davis, 2018]

Following the award of the 2012 Games to London on 5th July 2005, Games leaders at the GLA and newly established Olympic Delivery Authority (ODA) set to work on commissioning three masterplans covering proposals for the Games and Paralympic Games and their Legacy Transformation, suggesting an intention to avoid the issues of *timing* experienced in Sydney, for example, and the risks associated with lack of preparedness and uncertainty.<sup>46</sup> A new Planning Decisions Team at the ODA (which included representatives of the planning authorities from each of the Olympic Host Boroughs) devoted to planning process associated with the Games was established in 2005. EDAW were again appointed to lead masterplanning processes in 2006 along with FOA, Buro Happold, Allies and Morrison and HOK Sport. In spite of the conflicts that arose between the client and design team (and which led, eventually, to the resignation of FOA in late 2006), Outline Planning Approval was in place in 2007 for the suite of masterplans. Having secured this, design development could proceed for all elements of the Olympic stage, a process involving dozens of separate planning applications for venues, infrastructures and parklands between 2008 and 2011. Taking the form of a new 'Legacy Masterplan Framework' (LMF), planning could also commence in 2008 for the longer-term *redevelopment of the site* and, simultaneously, for the structure and establishment of the 'delivery vehicle' that this might require.<sup>47</sup> By 2010, this 'vehicle' existed in the form of the Olympic Park Legacy Company which began to drive legacy-oriented decision-making and, by 2012, the framework itself had planning permission.

Broadly, the 2007 Olympic and Paralympic masterplans confirmed the final layout of elements with the Olympic Park (Figure 2). They are, in many ways, quite different plans to those included in the Bid, though principles regarding the general mix of *temporary and permanent* venues, and ideas of *adaptability* remained in place, as shown in Figure 2. The Legacy Transformation masterplan showed how the event stage would be transformed through the removal of temporary venues and operations areas, the reconnection or 'stitching' of the site to surrounding neighbourhoods, and adaptation of parklands to create a series of 'development platforms' (Figure 3).<sup>48</sup>

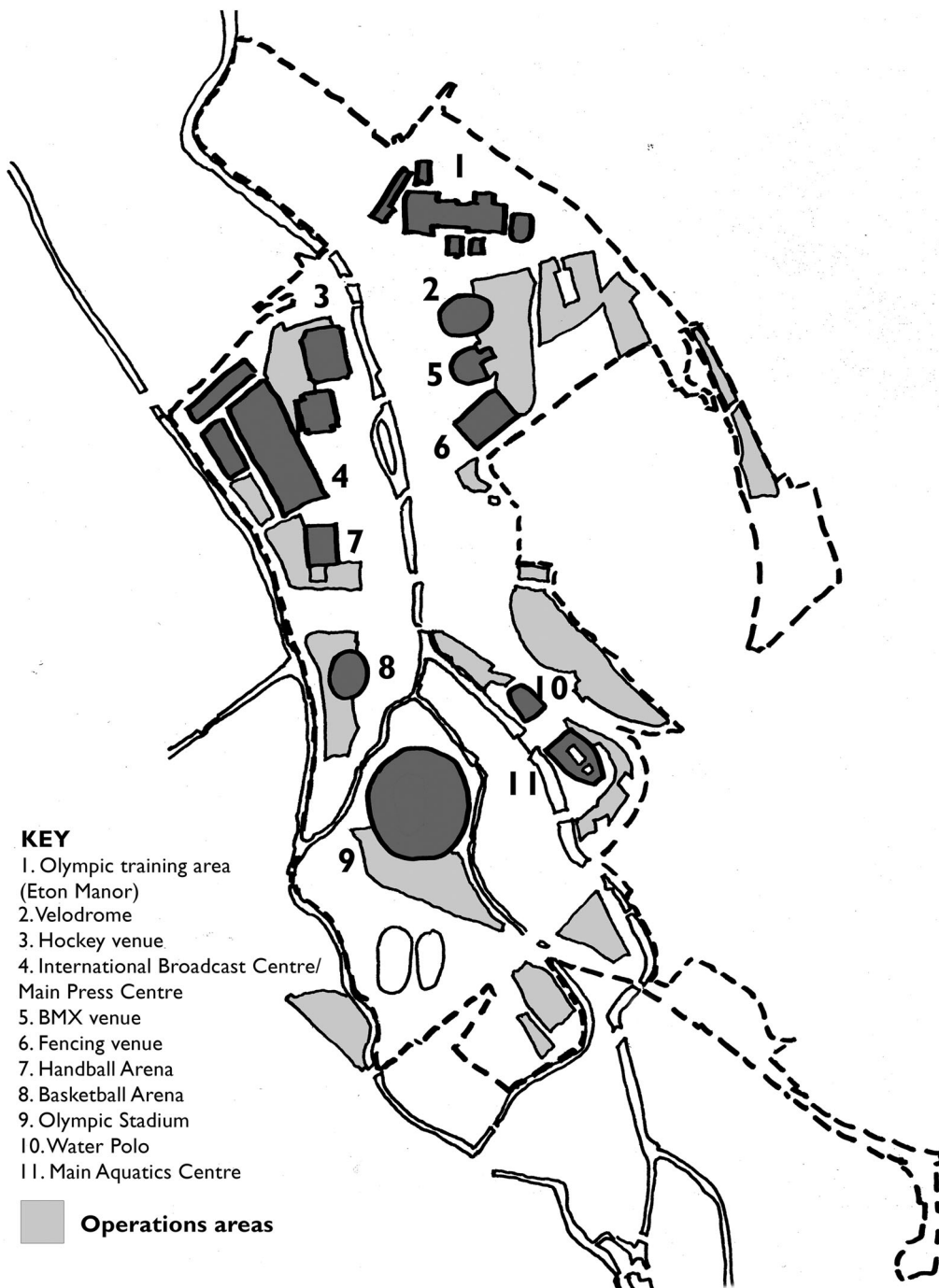
The goal of the LMF (renamed and approved as the Legacy Communities Scheme (LCS) in 2010) was to show how the redevelopment of these platforms could, over a period extending from 2012–2031, produce what was described as a 'new piece of city'<sup>49</sup> arising from the 'inheritance' of the

<sup>46</sup>National Audit Office, *Preparations for the London 2012 Olympic and Paralympic Games*, 7–22.

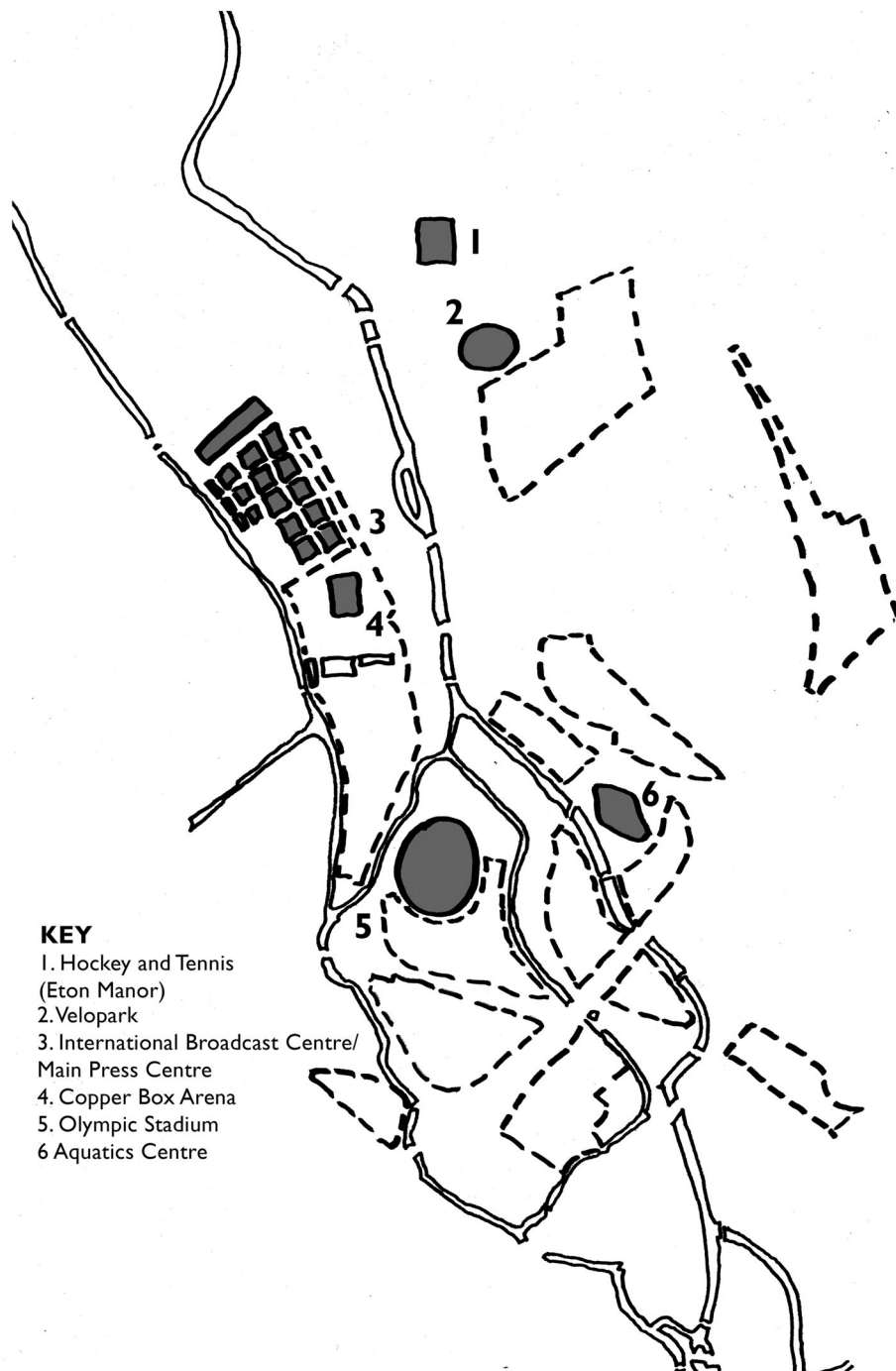
<sup>47</sup>As described by LDA planners in interviews, 2007–2009.

<sup>48</sup>ODA PDT, *Olympic, Paralympic & Legacy Transformation Planning Applications*, 12.

<sup>49</sup>Burdett, *The London Olympics – Making a "Piece of City"*.



**Figure 2** Diagram based on the Olympic Masterplan of 2007 showing locations of temporary and permanent venues within the Olympic Park [Juliet Davis, 2018]



**Figure 3** Diagram based on the Olympic Legacy Phase Masterplan of 2007 showing permanent venues and development sites (marked with dashed lines) [Juliet Davis, 2018]

Olympic Park.<sup>50</sup> It was a strategy to avoid the lack of vitality associated with monofunctional sports zones and, instead, enhance the benefits already created by the location of the site by generating further demand for the venues as future amenities. In developing this urban legacy, the LMF masterplanners – a consortium including, yet again, EDAW and Allies & Morrison and also Dutch Kees Christiaanse Architects and Planners (KCAP) – drew from historical precedents such as Verona in Italy where iconic vestiges of the Roman city, akin to the Olympic venues, are embedded within a fine-grained urban fabric that developed over time. Though proposals for urban form evolved, at the inception of the LMF, a compact, mixed-use and walkable city fabric was envisioned, exemplifying the Labour government's (1997-2010) Urban Renaissance agenda.

As suggested by the planning applications drawings submitted by the venue architects between 2008 and 2012, *temporary venues* were designed to be able to make valuable contributions to the festival-ground image of the Park during the Games but also to be dismantled and easily removed afterwards. Designs for the 12,000-seat Basketball Arena by Wilkinson Eyre Architects, for example, demonstrated through its folded façade surfaces that fleeting buildings could be as dramatic visually as permanent venues. Strategies used to make the building demountable included supporting it on hardstanding rather than slab foundations and using standard component sizes and simple connection details. In accordance with the ODA's sustainability strategy, designs were also expected to maximize capacities for materials to be recycled or reused afterwards, hence managing the potential wastefulness of planned obsolescence associated with temporary architecture.

Designs for the five *permanent* venues showed already in 2008 how they could be *adapted* after the Games to suit anticipated legacy reuses. In the case of the Aquatics Centre, by Zaha Hadid Architects, adaptability was created by designing the 17,500 spectator seats needed during the Games as two removable 'water wings' on the sides of the building. The temporary water polo facility adjacent to the building would also be removed. In contrast, for the Handball Arena by MAKE Architects – now called the Copper Box Arena – the key move was to create a permanent carapace that could be wrapped in the facilities needed to service it during the Games and fitted out to suit the needs of Olympic contests, and then unwrapped, gutted and refitted internally to produce a long-term, multi-use venue. The shell of the Velodrome, designed by Hopkins Architects, would also change relatively little though the landscape around the building would be remodelled to create an extensive VeloPark. The Olympic Stadium by Populous/ HOK Sport and Eton Manor by Stanton Williams Architects would both, in contrast, transform substantially, reflecting concerns regarding the future viability of both venues. Drawings of the Stadium from 2008 indicate a largely temporary structure, a far more pragmatic affair than Herzog and de Meuron's megalomaniac 'birds' nest' Stadium in Beijing, destined for deconstruction to provide a much more modest building as a home for British athletics.<sup>51</sup> The transformation of Eton Manor would involve a complex set of removals, insertions and new construction to form a Hockey and Tennis Centre. As with the temporary venues, the designs of permanent venues were expected to show how waste would be minimized in the process of adaptation and the removal of temporary components. One clear challenge of this would be that adaptations as envisioned were major (and, hence, costly) works.

In order to address the problem of a lack of *involvement of future operators and users in designs* in past Games, the ODA, and, from 2010, the Olympic Park Legacy Company (OPLC), endeavoured to secure future venue operators during the design phase, before the Games, in a bid to develop a

<sup>50</sup>Evans, Graeme, "London 2012," 382.

<sup>51</sup>Brown and Cresciani, "Adaptable Design in Olympic Construction," 397–416.



credible future reuse strategy. The Lea Valley Regional Park Authority (LVRPA) which manages public open land extending northward from the site was part of the process of making a case for the Games from 2002 as it already had plans for a Velodrome that predated this.<sup>52</sup> It was established as future operator of the Velopark and Eton Manor in 2005. Later, the ODA also engaged members of a local group known as the Eastway Users Group (EUG) who had utilized a cycling facility located on the same site before the Olympics.<sup>53</sup> However, as reported by the leader of the group in interview, this only came about after it had succeeded in publicising a claim to have been ‘evicted from the site in 2006’ and not recognized as a stakeholder in its future.<sup>54</sup> In other words, engagement here represented an attempt to resolve issues of democracy and inclusion that have often been associated with megaevents, as with planning processes led by quangos.<sup>55</sup>

For the Aquatics Centre and the Copper Box Arena, a not-for-profit social enterprise called Greenwich Leisure Limited was brought on board as future operator in 2011 under a ten-year arrangement, allowing it to play the lead role in the development of venue management plans and to shape design in its final stages before Transformation works began in 2012. The process of securing an operator for the Olympic Stadium unfolded less smoothly, however. The market response to an athletics venue was lower than expected, yet interest began to be shown in 2009 by football clubs including West Ham United. There was also a revealing reluctance on the part of the Conservative Mayor Boris Johnson whose term in office began in 2008, as the planning application for the venue was being finalised, to forsake the capacity of the Stadium to host major events.<sup>56</sup> This reflected Johnson’s predilection for monumentality and, as a reported by one planner at the LLDC, a conviction that ‘we can’t lose the Stadium’, in spite of warnings and lessons from other cities such as Sydney regarding large stadia.<sup>57</sup>

This led to a revisiting of ideas regarding *permanent and temporary* aspects of the Stadium’s architecture, in effect undoing years of work on avoiding a stadium white elephant through adaptability. In 2010, the newly established OPLC, launched a competition for a leaseholder/operator. It was won by a public-private partnership comprising the London Borough of Newham and West Ham United. The result was challenged by unsuccessful bidders and, fearing damaging publicity, in late 2011, the OPLC aborted the deal.<sup>58</sup> A new competition was launched in December 2011. Under pressure of time, plans to convert the Stadium into ‘a 60,000-seat multi-purpose venue with the capability of hosting top class athletics and football’ but also ‘a wide range of sporting, cultural and community events’ were developed by Populous during early 2012 and submitted for planning permission on 1 August 2012<sup>59</sup> before the competition outcomes had even been ascertained, let alone an operator brought on board. There were knock-on impacts on the LMF and on the *timings* of planning approval, which toiled on into the summer of 2013.

One of the goals of advance planning was to enable the costs of the Games and Legacy Transformation to be anticipated accurately, in theory enabling risk and uncertainty regarding post-Olympic costs to be managed. London’s 2004 Candidate File confirmed a budget of £1.54 billion for OCOG operational costs and £2.67 billion for non-OCOG direct costs associated with construction for the Games. On 15 March 2007, the Secretary of State for Culture, Media and Sport announced

<sup>52</sup>Interview, LVRPA representative, 2009.

<sup>53</sup>Hopkins Architects, *London 2012 Velodrome*, 23.

<sup>54</sup>Interview, EUG, October 2009.

<sup>55</sup>Sager, “Neo-liberal Urban Planning Policies”; Davidson and McNeill, “The Redevelopment of Olympic Sites,” 1625–1628.

<sup>56</sup>Stewart and Rayner, “Planning Mega-event Legacies,” 171.

<sup>57</sup>Interview, LLDC senior planner, November 2017.

<sup>58</sup>Stephens, “Moore Stephens Olympic Stadium Review,” 8.

<sup>59</sup>Planning reference: 12/00066/FUM

that the budget for these combined elements had increased to £9.325 billion (the projected final cost). According to Flyvbjerg and Stewart, by 2012, the total OCOG and non-OCOG-related sports cost represented a 'cost overrun of 101 per cent as compared to the budget in the Bid'.<sup>60</sup> The budget for sports venues alone (including non-Olympic Park ones) in 2007 was £1.038 billion, considerably more than the £885 million in the Bid and this had risen to 1.051 billion by 2012 (excluding Transformation work).<sup>61</sup> Some venues were more costly than others. Notably, costs associated with the Aquatics Centre trebled between 2004 and 2012 to £269 million – an unprecedented figure for a publicly-funded swimming complex in the UK. By comparison, the equivalently sized Cardiff International Pool opened in 2008 was constructed for approximately one tenth of the price (£32 million). These figures reveal London as another case of high ambition combined with overly optimistic economic modeling at the start of the process and a high cost burden for the public purse later – an exemplar of Flyvbjerg et al.'s 'megaproject paradox,' as described above.

Reuse strategies for the permanent venues were not anticipated to create the means to directly recover these costs. However, the sustainable reuses of the venues were expected to have a positive impact on the economic value of property within the 'development platforms'. In turn, capital appreciation combined with development rentals or sales in the future were anticipated to provide the means for a portion of the public funding package needed to host the Games site to be recovered,<sup>62</sup> though this could take decades and involve considerable further public investment along the way. This highlights the close relationship between financial and spatial planning in the development of the London Olympics' urban legacy and draws attention to the potential for strategy geared toward the creation of economic value to be in tension with regeneration goals geared toward the production of benefits for local areas and people.

In turn, future usage of the venues was expected to provide means to cover the maintenance and operation costs associated with venues and parklands, though an London Assembly report from 2011 indicates that venues would most likely not be able to be fully self-financing.<sup>63</sup> According to an LLDC investment committee report from 2018, the Aquatics Centre was expected at this stage to be the most expensive, generating a deficit of up to £835,000 per annum.

We turn now to explore the significance of efforts to avoid white elephants before the Games for the processes of Legacy Transformation and reuse afterwards and to consider the effectiveness of these in relation to the key aspects of the definition of white elephants presented in the introduction.

## Legacy transformation – August 2012–2018

Because the organization of the *timings of planning and design for legacy* had succeeded in ensuring that much of the work necessary to commence the Legacy Transformation works was in place before the Games, little uncertainty regarding what these would entail remained in relation to the Aquatics Centre, Copper Box Arena, VeloPark, and Eton Manor Hockey and Tennis Centre after them. Planning activity after August 2012 typically involved the approval of details or construction methods related to conditions in earlier planning permissions, the approval of non-material amendments and minor changes or additions arising in the process of finalising proposals for operating the legacy venues, and the submission by operators GLL and LVRPA of Event Management Plans and

<sup>60</sup>Flyvbjerg and Stewart, "Olympic Proportions," 15.

<sup>61</sup>DCMS, *London 2012 Olympic and Paralympic Games Quarterly Report*, 10.

<sup>62</sup>Grant-Long, "The Olympic Games and Urban Development Impacts," 101–13.

<sup>63</sup>London Assembly, *Park Life*, 12.

Validation Reports as required under the ODA's conditions to reopen venues. Transformation of these venues, and of the wider Park indeed, was able to proceed from Autumn 2012.

The fact that governance arrangements regarding the Legacy Transformation works and the realization of the long-term urban legacy (described by the legacy masterplan framework/ LCS) were well-established was of course key to this. The former works had fallen under the remit of the ODA but were taken up by the London Legacy Development Corporation (LLDC) which superseded the earlier OPLC (as above). Upon its formation in 2012, the LLDC took on the ownership of the site, absorbed the planning powers held by the ODA before 2012 and, under the new British Localism Act (2011), was enabled to create local planning policy for the site and its urban fringe, thereby becoming responsible for delivering the latter as well. Its challenge would be to balance objectives regarding the regeneration of East London with the need of a commercial landowner focused on realizing the economic potential of the Olympic 'catalyst'.

A careful sequencing and *timing* of activities continued to form an important part of the OPLC/LLDC/s plan for delivering the Legacy Transformation works from 2012, simply defined as their 'Clear, Connect and Complete' strategy.<sup>64</sup> 'Clear' involved the removal of vast quantities of material associated with temporary venues, Games-time security, spectator stands, hard landscaping, catering facilities, back-of house operations associated with all venues (as shown in Figure 2), and all other items of event 'overlay' as installed by the London Organising Committee of the Olympic and Paralympic Games (LOCOG), creating the 'developments platforms' discussed above. 'Connect' entailed the creation of strategic 'stitches' (bridges, footways and cycle paths) between the site and surrounding areas, opening facilities and infrastructures up to these neighbourhoods.<sup>65</sup> 'Complete', finally, involved the planned works necessary to adapt parklands and permanent venues ready for reopening.

As discussed in the section above, the sustainability strategy developed by the ODA required the designers of *temporary venues* and other elements to consider how to minimize the potential waste that removal – the focus of the 'Clear' work – would generate. The upshot was that 90 per cent of material (and sports equipment) was either reused or recycled, suggesting that the objective of the strategy was met.<sup>66</sup> Notwithstanding, the early vision that whole venues might be reinstalled elsewhere did not materialize. For example, Wilkinson Eyre's Basketball Arena which, for a time, was considered as a potential venue for Rio 2016, was dismantled and sold off as components as costs of transportation and re-erection became prohibitive. The significance of this is that recycling is more energy-intensive yet less economical than reuse and that London's temporary installations were more impactful in terms of carbon and cost than they might have been, and that they were also more wasteful of value invested in high-end design.

For four of the *permanent venues* – the Aquatics Centre, Copper Box Arena, Velodrome and Eton Manor (from here on the Lee Valley Hockey and Tennis Centre) – the 'Complete' works were broadly as outlined in the previous section, including the removal of the 'water wings' on the Aquatics Centre (Figure 4), the formation of the VeloPark, and the like. The design of the venues had of course been fine-tuned continuously since 2008 to suit the emerging programmes of anticipated reuse in each case. A common emphasis had been placed on creating the potential for everyday as well as event use, and for grassroots as well as elite sporting activities. For example, planned *adaptations* of the Velodrome to form cycling tracks designed around the requirements of the four

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<sup>64</sup>OPLC, *Creating the Queen Elizabeth Olympic Park*, 23.

<sup>65</sup>Ibid.

<sup>66</sup>WRAP, 'London 2012 Legacy Transfer Report,'



**Figure 4** Aquatics Centre viewed from across the QE Olympic Park, with new development in the background [Juliet Davis, 2018]

cycling disciplines, a VeloStudio, conferencing facilities and cycle hire facility, reflected the LVRPA's desire to appeal to different cyclists and provide for 'all levels of cycling, from entry-level to international standard' (Figure 5).<sup>1</sup> The works proceeded rapidly, and these four venues reopened to



**Figure 5** The Velodrome viewed from across part of the VeloPark [Juliet Davis, 2018]



the public between mid-2013 and early 2014. Northern and southern sections of the renamed Queen Elizabeth Olympic Park also opened between these dates.

However, the slower process of securing a future for the Stadium before the Games meant that negotiations with prospective operators and transformation planning remained ongoing throughout this time. There were also ongoing uncertainties surrounding viability, governance, future operation, and the design brief for adaptation. In terms of governance, E20 Stadium LLP was established in 2012 as a partnership between the then newly established LLDC and the London Borough of Newham under a 102-year lease arrangement. Following the complex bidding process described in the previous section, West Ham United was again selected as preferred bidder in December 2012.

As reported in legal firm Moore Stephens's analysis of the Stadium's troubled history, one of the conditions it exacted from the LLDC was that 'retractable seating [would] be installed to cover the [remaining] athletics tracks during football matches and that all seats [would] be covered by a roof in order to create appropriate relationships between spectators and players in the context of football matches while retaining the capacity for the venue to be a focus for British athletics.'<sup>67</sup> Again keen to minimize further delays, the LLDC took the risk of allowing these works to begin in 2014 before design had been completed. As it turned out, the seating did not work leading the contractor to go into administration and creating the need for redesign. The resulting delays came at a cost to the project and a decision to proceed with hosting the 2015 Rugby World Cup meant splitting the works into two phases, creating further delays and costs. The works were finally complete in the summer of 2016.

Coming onto matters of practical value, the evidence of visitor numbers to the four other venues suggests that they have been in high demand since opening in 2013/2014 and are a far cry from functional obsolescence. In 2017, more than one million people visited the London Aquatics Centre while 425,773 visited the Copper Box Arena.<sup>68</sup> According to one manager interviewed as part of the research, approximately 850,000 visited the VeloPark and 600,000 attended the Lee Valley Hockey and Tennis Centre.<sup>69</sup> Of course, these figures are silent regarding who the venues hold value for or who is able to use them, the balance of local users from the Olympic Host Boroughs versus other visitors, the extent to which local demands for the new facilities have been met or the relationship between visitor numbers and venues capacities. Dense programmes of events, extended opening times and the range of facilities on offer at each venue certainly suggest a common intention to encourage the participation of diverse user groups and to maximize the use of venues. However, the following offers some more detailed observations on the mix of users and uses at two of the four – the Aquatics Centre and the VeloPark.

The Aquatics Centre has hosted numerous swimming events including, among many others, the Invictus Games and the LEN European Aquatics Championships while being very much a public pool, open all week. A range of lessons, courses and other opportunities for swimmers of different levels are available, bookable by individuals, schools or other organizations. As reported by the LLDC, in 2017/18, '3,000 school children attend[ed] weekly lessons and 3,800 young people signed up to the Better Swim School programme and 700 to the learn to dive programme'<sup>70</sup> One issue is that, due to the venue's location in an area of high population growth, adjacent to a large new shopping centre and well-served by public transport, local demand is anticipated to increase. However, local demand is not the only kind of demand for the venues. Demand from visitors from beyond

<sup>67</sup>Moore Stephens, *Moore Stephens Olympic Stadium Review*, 9.

<sup>68</sup>LLDC, *Annual Report and Accounts 2017/2018*.

<sup>69</sup>Interview, Vibrant Partnerships, manager, May 2019.

<sup>70</sup>*Ibid*, 11.



the London Borough of Newham wishing to experience the iconic facility is also high and anticipated to remain so. There is a recognized risk that local demand will increasingly not be met by the venue, especially at peak use times.<sup>71</sup> This is a very different problem to the lack of practical value that is intrinsic to the definition of white elephants of course but it is an important one in light of the promised of benefits arising from the Games for a deprived East London lacking in amenities, for the idea of local legacy.

Past Velodromes such as the one built for the 2004 Athens Olympics designed by Santiago Calatrava, the Spanish designer famed for producing white elephants, have proved particularly vulnerable to obsolescence. The VeloPark has, in contrast, been used for an array of international, national, regional and local competitive events, as a training venue for national and regional-level clubs and a local cycle centre. The venue has offered a packed programme of cycling opportunities aimed at widening participation in the sport to better include women, BME groups, and disabled people as well as to cultivate interest and nurture emerging talent among junior riders. One issue here is with the location of the venue which though only a mile away from the Aquatics Centre, and a little further away from public transport links makes it 'more of a hard sell', as one manager put it, underscoring the crucial importance of accessibility.<sup>72</sup> Another appears to be with how different demands are met in order to cover those marketing and operation costs. The LVRPA's strapline is 'commercially oriented, community led'. Members the Eastway Users' Group (EUG) which was heavily involved in the design of the venue before the Games (as discussed in the section above) argued that, in responding to interest in hosting events, the LVRPA has typically favoured some groups over others, notably commercial operators over volunteer-run clubs. 'The community element', as the former group leader put it, 'is marginalised' and the result is that certain grassroots sporting events that could happen at the VeloPark have gone elsewhere.<sup>73</sup> As with the Aquatics Centre, this is clearly significant in light of the construction of early justifications for Olympic Games-related development, and, particularly, for the redevelopment of an existing cycling facility in terms of regeneration and local demand.

The fate of the Stadium was, at least until 2016, a different matter altogether. It began to be utilized by West Ham in August 2016. Since then, it has played host to the Athletics World Cup, the Muller Anniversary Games and three seasons of West Ham United Football Club's games. These events suggest the potential for the use-value of this building to turn around and, thus, perhaps, for it to be no longer a white elephant. However, there have been teething issues associated with the designed flexibility of the building – for example, 28 days per annum of potential use are lost to seat moves, and pitch specifications limit use for some sports such as cricket.<sup>74</sup>

This brings us on, finally, to the issue of the legacies of planning and design to date in terms of: (a) costs of Legacy Transformation, and (b) costs of operation and maintenance relative to income. Work undertaken in 2012–13 was reported to have been carried out for £89 million reflecting the significant amount of construction necessary to adapt venues and parklands.<sup>75</sup> This was, however, within the 2007 public funding budget allocated to Transformation and left £375 million to spend on the completions of the IMBC/MPC, Main Stadium and landscaping.<sup>76</sup> But, by the opening of the Stadium in 2016, transformation costs had spiralled to a vast £323 million for it alone. Under

<sup>71</sup>4 global Consulting, London Borough of Newham, Strategic Leisure Facility Needs Assessment, 101–16.

<sup>72</sup>Interview, Vibrant Partnerships, manager, May 2019.

<sup>73</sup>Structured interviews conducted with EUG in May 2019.

<sup>74</sup>"Moore Stephens, *Olympic Stadium Review*, 159.

<sup>75</sup>LLDC, *Annual Report and Accounts 2012–2013*.

<sup>76</sup>*Ibid.*

the terms of the deal struck with E20 Stadium LLP, West Ham itself invested only £15 million upfront though was committed to paying rent over the 100-year period of its lease. In theory, this would enable investment to be recouped incrementally but, in the meantime, at a time of austerity affecting the provision and operation of public facilities across the UK, the public purse was made to bear the immediate cost and long-term risk for uncertain public benefit. In 2016, the overrun led the new Mayor Sadiq Khan to request the GLA to commission an investigation into the Stadium's finances and to bring E20 Stadium LLP under Mayoral control, suggesting the potential for new beginnings. However, as a result of uncertain futurity and the fact that net expenditure on the venue for 2017–2018 alone totalled £14.9 million, the Stadium remains only a liability, a white elephant in financial terms, its 'fair value' as a public asset standing at zero.<sup>77</sup>

Cost associated with maintaining and operating all the venues have also been considerable. Since their opening, GLL has shouldered operation costs associated with the Aquatics Centre and Copper Box Arena, though maintenance costs are covered by LLDC. GLL receive the revenue but pay a fee to the LLDC, and surpluses or deficits are shared between the two. Though the LLDC's Annual Report and Accounts of 2017/2018 suggest 'strong revenue performance' for their facilities generally, they also reveal that the Aquatics Centre was operated at a deficit to the LLDC of an eye-watering £1.255 million (significantly higher than anticipated) while, for the first time, the Copper Box Arena operated at a small surplus of £91,000.<sup>78</sup> In other words, despite meeting projected visitor number targets, providing societal benefits and addressing demands, the Aquatics Centre is 'limping' by comparison to forecasts. The issue here is not that the venue operates at a cost to the public purse, as public pools in the UK typically do, but how much it costs and that moves to bring costs in line with other such amenities could pose risks to the accessibility and inclusivity of the facility in the future, already suggested by recent price rises.

Since opening, the venues owned by the LVRPA have been leased and operated by a Trust called Vibrant Partnerships. The LVRPA is funded by a mixture of private incomes and a levy on the London Boroughs. Though precise figures for the costs of the venues were not identified through this research, LVRPA annual accounts from 2017 report that 'financial liabilities relating to the Olympic venues were significant'. Further, as relayed by one manager, the VeloPark runs at a 'small operational surplus' while the Hockey and Tennis Centre runs 'at a reasonable deficit'. However, as he put it, 'we have to work a heck of a lot to break even' on the VeloPark.<sup>79</sup> As with Aquatics, and as already indicated, the risk this poses relate to the 'community-oriented' aspect of the LVRPA's management strategy.

Of course, the redevelopment of the Park remains key to the financial health of the Olympic Park venues overall. Planning gain from the award of permissions related to the 'development platforms', the sale of developments and a Fixed Estate Charge levied on the new residents of the Park all provide the means for the LLDC to offset costs of investment, management and maintenance. While these sources of revenue can be seen as part of a distinctive urbanistic model that London has created with regard to legacy-making, there remains the possibility that decisions regarding investments in regeneration goals elsewhere in the LLDC's area could be affected by financial issues associated with parklands and venues. This is reflected not least in LLDC Chair Peter Hendy's 2018 statement that '[s]ignificant challenges remain for delivering [...] homes and jobs and putting all the venues, especially the London Stadium, onto a sustainable footing'.<sup>80</sup>

<sup>77</sup>LLDC, *Annual Report and Accounts 2017/2018*, 70–71.

<sup>78</sup>Ibid., 83.

<sup>79</sup>Interview, Vibrant Partnerships, manager, May 2019.

<sup>80</sup>LLDC, "Annual Report and Accounts 2017/2018," 3.

## Conclusions

Anticipating the legacy of London's 2012 Games began, as has often been seen to be the case in the early stages of megaevent bidding and planning, with the articulation of major promises. Among these was a pledge to avoid the white elephants that have plagued other Olympic cities. The paper has explored how London addressed this promise through the planning and design of its venues and what the outcomes have been over a six-year period.

Planning and design strategies developed before 2012 addressed many of the issues arising in the context of earlier Olympic Games, as documented in the first part of the paper, relating to the *siting of venues* in view of understandings of existing and future demand for sports facilities, the use of *existing venues* for the Games, the timings of legacy planning, the challenge of repurposing *permanent development*, the creation of appropriate *adaptability and flexibility*, the demountability and recyclability of *temporary venues*, and the early *involvement of future operators and users*. However, the processes of planning, design and development also produced a major cost overrun, a characteristic outcome of megaprojects, that raises important questions regarding value for money for the public purse and the local communities that would host the Games. Tensions between the commercial orientation of legacy development positioned as the means to recoup investment and the promise of regeneration in deprived East London also began to be apparent at this stage. These are understood as perennial issues of neoliberalism involving the use of megaevent design and development as 'catalysts' to property-led transformation. By 2012, the Stadium seemed set to become another exemplar of the white elephant phenomenon – a hulking structure with uncertain practical value.

Since the Games, the benefits of planning *timed* to avoid an 'uncertain legacy' as in Sydney were evident in the efficiency with which much of the Legacy Transformation work proceeded, leading to the repurposing of four venues by 2014. The Stadium, conversely, suffered as a result of the change in approach to its future before 2012 and produced a further 'calamitous cost overrun'<sup>81</sup> in the process of transformation, all the more significant as this occurred at a time of constrained public finances nationally. This venue reflects many of the issues associated with neoliberal planning policy involving the production of expensive iconic buildings, top-down decision-making by political elites, and the taking of risk at public expense. But the challenge of creating venues that pay their way and are, at the same time, widely accessible is apparent across the other venues, creating long-term uncertainty regarding their operability, inclusivity and the delivery of regeneration goals across the park more widely. As all the venues are 'expensive to keep', to quote the OED in its definition of a white elephant, legacy leaders must continue to demonstrate their social and cultural values, and how, thus, costs can continue to be substantiated.

The case offers several contributions to existing understandings of how to avoid white elephants. It strengthens existing arguments regarding the importance of developing strategies related to the locations and futures of venues in the context of wider urban plans. It suggests the need to go beyond strategies to increase the number of temporary venues to also seek to reduce the costs and potential waste associated with dismantling structures. While highlighting the value of designing permanent venues to be adaptable and flexible, it also points to the need to manage the cost of the work this entails which can also be burdensome and raise questions regarding the real value of the Olympics as a means to deliver amenities for localities and cities. While the programmes of activity associated with the Aquatics Centre and VeloPark offer new precedents for current and future Olympics cities,

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<sup>81</sup>Flyvbjerg et al., *Megaprojects and Risks*, 11–22.

they also suggest that careful consideration of how different demands for facilities are balanced is required to avoid social exclusions. Cost overruns in the context of development and transformation point to an ongoing need for responsible realism at the inception of processes and a better anticipation of risks. But finally, while London offers an exemplar in many ways of an Olympic Games that has been integrated within a long-term plan for the creation of a strategically-positioned new ‘piece of city’, issues of inclusion, value and risk highlighted throughout the paper also point to the value of going beyond mere tweaks to the status quo – creating less elephantine megaevent stages – to consider fundamentally alternative rationales for and approaches to Olympic Games planning and design.

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## Bibliography

- Abramson, Daniel. *Obsolescence: An Architectural History*. Chicago: The University of Chicago Press, 2016.
- Alm, Jens, Harry Solberg, Rasmus Storm, and Tor Jakobsen. “Hosting Major Sports Events: The Challenge of Taming White Elephants.” *Leisure Studies* 35, no. 5 (2016): 564–582.
- Assembly, London. *Park Life: The Legacy of London’s Olympic Venues*. London: Greater London Authority, 2011.
- Brown, Laura Alexandra, and Manuel Cresciani. “Adaptable Design in Olympic Construction.” *International Journal of Building Pathology and Adaptation* 35, no. 4 (2017): 397–416.

- Burdett, Ricky. "The London Olympics – Making a 'Piece of City'." LSE British Politics and Policy, article posted on 1 August 2012, <https://blogs.lse.ac.uk/politicsandpolicy/london-olympics-making-piece-of-city-burdett/>.
- Cashman, Richard. *The Bitter-Sweet Awakening: The Legacy of the Sydney 2000 Olympic Games*. Petersham: Walla Walla Press, 2006.
- Davidson, Mark. "The Sustainable and Entrepreneurial Park? Contradictions and Persistent Antagonisms at Sydney's Olympic Park." *Urban Geography* 34, no. 5 (2013): 657–676.
- Davidson, Mark, and D. McNeill. "The Redevelopment of Olympic Sites: Examining the Legacy of Sydney Olympic Park." *Urban Studies* 49, no. 8 (2012): 1625–1641.
- Davis, Juliet. "Futurescapes of Urban Regeneration: Ten Years of Design for the Unfolding Urban Legacy of London's Olympic Games, 2008–2018." *Planning Perspectives* (2018).
- Department for Culture, Media and Sport (DCMS). *London 2012 Olympic and Paralympic Games Quarterly Report*. London: DCMS, 2011.
- Essex, Stephen, and Brian Chalkley. "The Olympics as a Catalyst of Urban Renewal: A Review." *Leisure Studies* 17, no. 3 (1998): 187–206.
- Evans, Graeme. "London 2012." In *Olympic Cities: City Agendas, Planning and the World's Games, 1896–2012*, edited by John Gold, and Margaret Gold, 315–339. London: Routledge, 2007.
- Flyvbjerg, Bent, and Allison Stewart. "Olympic Proportions: Cost and Cost Overrun at the Olympics 1960–2012." Said Business School Working Papers (2012), [https://eureka.sbs.ox.ac.uk/4943/1/SSRN-id2382612\\_\(2\).pdf](https://eureka.sbs.ox.ac.uk/4943/1/SSRN-id2382612_(2).pdf).
- Flyvbjerg, Bent, Nils Bruzelius, and Werner Rottengater. *Megaprojects and Risks: Anatomy of Ambitions*. Cambridge: Cambridge University Press, 2014.
- global Consulting. *London Borough of Newham: Strategic Leisure Facility Needs Assessment*. London: 4global limited, 2017. <https://www.newham.gov.uk/Documents/Environment%20and%20planning/StrategicLeisureFacilitiesNeedsAssessment.pdf>.
- Gold, John, and Margaret Gold. "Future Indefinite? London 2012, the Spectre of Retrenchment and the Challenge of Olympic Sports Legacy." *The London Journal* 34, no. 2): 179–196.
- Gold, John, and Margaret Gold. "From A to B: The Summer Olympics, 1896–2008." In *Olympic Cities: City Agendas, Planning and the World's Games, 1896–2016*, edited by John Gold, and Margaret Gold, 17–55. Abingdon: Routledge, 2011.
- Grant-Long, Judith. "The Olympic Games and Urban Development Impacts." In *The London Olympics and Urban Development*, edited by Valerie Viehoff, Gavin Poynter, and Li Yang, 101–113. London: Routledge, 2015.
- Ltd, Greenwich Leisure. (GLL). *Copper Box Arena, Queen Elizabeth Olympic Park: Event Management Plan*. London: GLL, 2013.
- Hall, C. Michael. "Urban Entrepreneurship, Corporate Interests and Sports Mega-Events: The Thin Policies of Competitiveness Within the Hard Outcomes of Neoliberalism." *Sociological Review* 54, no. 2 (2006): 59–70.
- Hopkins Architects. *London 2012 Velodrome: Design in Pursuit of Efficiency*. London: The Architects' Journal, 2011.
- Horne, John. "The Four 'Knowns' of Sports Mega-Events." *Leisure Studies* 26, no. 1 (2007): 81–96.
- Kelso, Paul. "Heavyweights Line up for London's 2012 Bid: Blair and Gold-Medal Legends Put Case for Capital as Livingstone Pledges Facilities Would Not Be White Elephants." *The Guardian*, August 14, 2004.
- Latouche, Daniel. "Montreal, 1976." In *Olympic Cities: City Agendas, Planning and the World's Games, 1896–2016*, edited by John Gold, and Margaret Gold, 247–267. Abingdon: Routledge, 2011.
- Lauermann, John, and Mark Davidson. "Negotiating Particularity in Neoliberalism: Tracing Development Strategies Across Neoliberal Urban Governance Projects." *Antipode* 45, no. 5 (2013): 1277–1297.
- Lea Valley Regional Park Authority (LVRPA). *Lee Valley Velopark: Summary Management Plan*. London: LVRPA, 2012.
- Liao, Hanwen, and Adrian Pitts. "A Brief Historical Review of Olympic Urbanization." *The International Journal of the History of Sport* 23, no. 7 (2006): 1232–1252.
- London Assembly. *Park Life: The Legacy of London's Venues*. London: Greater London Authority, 2011.
- London Legacy Development Corporation (LLDC). *Annual Reports and Accounts 2012–2018*. London: LLDC, 2013–2018.
- London 2012. *Candidate File*. London: London 2012, 2004.



- Mangan, John A. "Prologue: Guarantees of Global Goodwill: Post-Olympic Legacies – too Many Limping White Elephants?" *The International Journal of the History of Sport* 25, no. 14 (2008): 1869–1883.
- Mangan, John A., and Dong Jinxia. "Beijing Olympics Legacies: Certain Intentions and Certain and Uncertain Outcomes." In *Olympic Legacies: Intended and Unintended*, edited by John A. Mangan, 136–157. Oxford: Routledge, 2009.
- London, Mayor of. *London Plan*. London: GLA, 2004.
- Mitrofanova, Inna V., Elena Russkova, Victoria Batmanova, and Ekaterina Shkarupa. "Drivers of the Regional Economic Growth and the Problem of "White Elephants" of the Russian Olympic Megaproject "Sochi 2014"." *Mediterranean Journal of Social Sciences* 6, no. 4 (2015): 267–276.
- Monclus, Francisco-Javier. "Barcelona 1992." In *Olympic Cities: City Agendas, Planning and the World's Games, 1896-2016*, edited by John Gold, and Margaret Gold, 268–286. Abingdon: Routledge, 2011.
- Moore Stephens. *Moore Stephens Olympic Stadium Review*. London: Moore Stephens, 2017.
- Müller, Martin. "The Mega-Event Syndrome: Why So Much Goes Wrong in Mega-Event Planning and What to Do About It." *Journal of the American Planning Association* 81, no. 1 (2015): 6–17.
- National Audit Office. *Preparations for the London 2012 Olympic and Paralympic Games—Risk Assessment and Management*. London: The Stationary Office, 2007.
- Olympic Delivery Authority Planning Decisions Team. *Olympic, Paralympic & Legacy Transformation Planning Applications* (OLY-GLB-ACC-DOC-TRA-01B). London: ODA PDT, 2007.
- Olympic Park Legacy Company (OPLC). *Creating the Queen Elizabeth Olympic Park: Post-Games Transformation*. London: OPLC, 2012.
- Panagiotopoulou, Roy. "The Legacies of the Athens 2004 Olympic Games: A Bitter-Sweet Burden." *Contemporary Social Science* 9, no. 2 (2014): 173–195.
- Ren, Xuefei. "Architecture and Nation Building in the Age of Globalization: Construction of the National Stadium of Beijing for the 2008 Olympics." *Journal of Urban Affairs* 30, no. 2 (2008): 175–190.
- Sager, Tore. "Neo-Liberal Urban Planning Policies: A Literature Survey 1990–2010." *Progress in Planning* 76, no. 4 (2011): 147–199.
- Sánchez, Fernanda, and Anne-Marie Broudehoux. "Mega-Events and Urban Regeneration in Rio De Janeiro: Planning in a State of Emergency." *International Journal of Urban Sustainable Development* 5, no. 2 (2013): 132–153.
- Searle, Glen. "The Long-Term Urban Impacts of the Sydney Olympic Games." *Australian Planner* 49, no. 3 (2012): 195–202.
- Searle, Glen. "Uncertain Legacy: Sydney's Olympic Stadiums." *European Planning Studies* 10, no. 7 (2002): 845–860.
- Sklair, Leslie. "Iconic Architecture and the Culture-Ideology of Consumerism." *Theory, Culture & Society* 27, no. 5 (2010): 135–159.
- Smith, Andrew. "Spreading the Positive Effects of Major Events to Peripheral Areas." *Journal of Policy Research in Tourism, Leisure and Events* 1, no. 3 (2009): 231–246.
- Smith, Andrew. *Events and Urban Regeneration: The Strategic use of Events to Revitalise Cities*. Abingdon: Routledge, 2012.
- Stewart, Allison, and Steve Rayner. "Planning Mega-Event Legacies: Uncomfortable Knowledge for Host Cities." *Planning Perspectives* 31, no. 2 (2016): 157–179.
- Traganou, Jilly. *Designing the Olympics: Representation, Participation, Contestation*. London: Routledge, 2016.
- Waste and Resources Action Programme (WRAP). *London 2012 Legacy Transfer Report: Event Waste Management*. London: WRAP, 2012.
- Zimbalist, Andrew, ed. *Rio 2016: Olympic Myths, Hard Realities*. Washington: Brookings Institution Press, 2017.